

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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EDITORIAL COMMENT.



REFERENCE has been made in FLIGHT repeatedly during the last few months to the lamentable position in which Great Britain finds herself in the matter of world's aviation records. To the much graver issues at stake we have hitherto refrained from referring, hoping that matters would mend without too much unwanted publicity. The general press, however, has now taken the matter up, and one of our foremost aircraft constructors has publicly referred to the present eclipse of British air supremacy, so that there no longer appears to be any good reason for reticence. Two daily papers in particular have made the subject prominent, although to some extent from different points of view. In the *Daily Mail* Mr. Harry Harper has in a series of articles uttered words of warning concerning the fourth-rate position into which Great Britain has been allowed to drift from her pinnacle of leadership immediately after the War. The articles will doubtless be described by many as alarmist propaganda, yet who, having had experience of aerial warfare during the latter part of the War, 1914-18, will doubt that when there is another war the air will play a much greater part, and may even play a quick and decisive part. While we are not prepared to agree with Mr. Harper in all he sets forth, there is sufficient cause for serious alarm, and we think he and the *Daily Mail* deserve well of the community for a very timely warning, as it is only by influencing public opinion that matters can be remedied.

The aeronautical correspondent of the *Morning Post*, writing less on generalities and more on specific shortcomings, has, we think, stated the case briefly and clearly. The sum total of his arguments is that British aeroplanes, and particularly British fighting aeroplanes, are inferior in performance to the "opposite numbers" of several other nations, and he very correctly points out that this lamentable fact, for it must be admitted to be a fact, unpleasant as is the admission, is due not to any shortcomings on the part of British aircraft designers and constructors, but to the system in force whereby our designers are handicapped by official interference.

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1925

Apr. 23	Colonel F. Searle: "The Maintenance of Commercial Aircraft," before R.Ae.S.
Apr. 24	Commander C. D. Burney, C.M.G., M.P., R.N.: "The Position of the Airship in Aerial Transport," before I.Ae.E.
Apr. 30	Wilbur Wright Lecture, Rear-Admiral D. W. Taylor: "Some Aspects of the Comparison of Model and Full-Scale Tests," before R.Ae.S.
May 8	Capt. W. H. Sayers, Hons. Member: "A Resume of Achievements in Aviation during the Past Year," before I.Ae.E.
May 7	Aero Golfing Soc. Spring Meeting, Worplesdon.
May 20	Visit to the National Physical Laboratory, Teddington, by I.Ae.E.
May 21	Aero Golfing Soc. Match, Cassiobury Park.
May 29	Aero Golfing Soc. Match, Oxhey.
June	Race Meeting at Hendon Aerodrome.
June 6	Visit to Croydon Aerodrome, by I.Ae.E.

Finally, at the luncheon given by the directors of the Fairey Aviation Company to Wing-Commander Goble, on Friday of last week, Mr. Fairey referred to the fact that after the War Great Britain was in a position of undoubted superiority as regards the air, and that at first this position was maintained and British prestige was strengthened by the now famous flights made in 1919. He then traced briefly the decline of British air power, and although he referred to it as a temporary eclipse and said that we had been temporarily outnumbered and outshone, it was not difficult to gather that he regarded, as must all who have the welfare of the Empire at heart, the position as serious. The one redeeming feature, although an entirely gratuitous one as far as the present Air Ministry system is concerned, was, he said, that we still had the best pilots in the world. Incidentally Mr. Fairey pointed a way, indeed the only way, out of the mess in which we found ourselves aerially. He said that it was for the House of Commons and for the general public to insist that the present intolerable position was altered.

In other words, until and unless the nation demands a change in policy we shall, if we are lucky, remain as we are. If we are not lucky we shall progress backwards. It will thus be seen that the feeling is now becoming general, and incidentally it is a feeling which has long been shared with those intimately in touch with aviation matters, that all is not well. As we have said, we have hitherto refrained from doing more than referring to one side of the question, that of world's records, because we had hoped that the much more serious questions involved would be solved quietly and without a publicity that cannot well be calculated to increase British prestige abroad. Washing dirty linen in public is never a very satisfactory procedure, but presumably it is better washed in public than not washed at all. We had hoped that the Society of British Aircraft Constructors, by taking a firm and united stand, would have succeeded in making the authorities see where the present system has led us, and so have been able to find a remedy without informing the world that a remedy was ever required. That, however, does not appear to have been found possible, and the matter must therefore be taken further.

As very clearly and correctly pointed out by the Aeronautical Correspondent of the *Morning Post*, the root of the trouble is the system at present in force whereby, for all practical purposes, the Air Ministry designs new types of machines. The Air Ministry does not actually, of course, do the designing, but by issuing certain specifications of performances required, equipment to be carried, load factors to be employed, and so forth narrows down the possibility of original thought to such restricted limits that the scope for inspiration is non-existent and the machines resulting turn out uninteresting mediocrities. It would appear that not only is the original specification to blame, but even more so the equipment on which the sub-departments insist. We wish it to be understood that we are not criticising individuals of the various Air Ministry technical departments, most of whom are, as a matter of fact, very capable and fair-minded, but the system by which machine equipment is carried out and the lack of a central co-ordinating body with powers to keep the sub-departments in their proper place. As it is, every department insists that its own "gadgets" must be fitted, and it is often found that

to do so means fouling the "doohickies" of another department which is equally insistent. Then the "stress merchant" has his say, and the load factors, by the time all the junk is mounted in the machine, result in a still heavier aeroplane, with, very naturally, an inferior performance. We are perfectly certain that one grave error made by the Air Ministry is the sacrifice of performance for superfluous equipment. One "clean" fighting aeroplane with one, or at most two, guns and with a superior performance, would be able to make light of an opponent loaded up with every conceivable piece of apparatus and equipment but slower by 15 miles per hour and with far inferior rate of climb and lower ceiling. Fortunately, there are signs that one or two constructors are rebelling at the position and have built, or are building, machines unblest by the Air Ministry, but with a performance as good as, or better than, that of the machines of any other country in the world. That should help to convince the Air Ministry, but, as Mr. Fairey pointed out, the real remedy will not come until the general public realises the position and clamours for drastic measures.

♦ ♦ ♦
"Amateurs" Something of the difficulties confronting the British aircraft designer, and the absence of blame attaching to him direct, will have been gathered from the foregoing. It is, therefore, with considerable surprise that we notice, in a recent issue of a contemporary, an article in which the author casts a wholly undeserved slur on British aircraft designers. The main subject of the article deals with engineers in the Royal Air Force, and with the suggestions there expressed we agree in the main. But then comes the following passage, which is astounding, to say the least:—

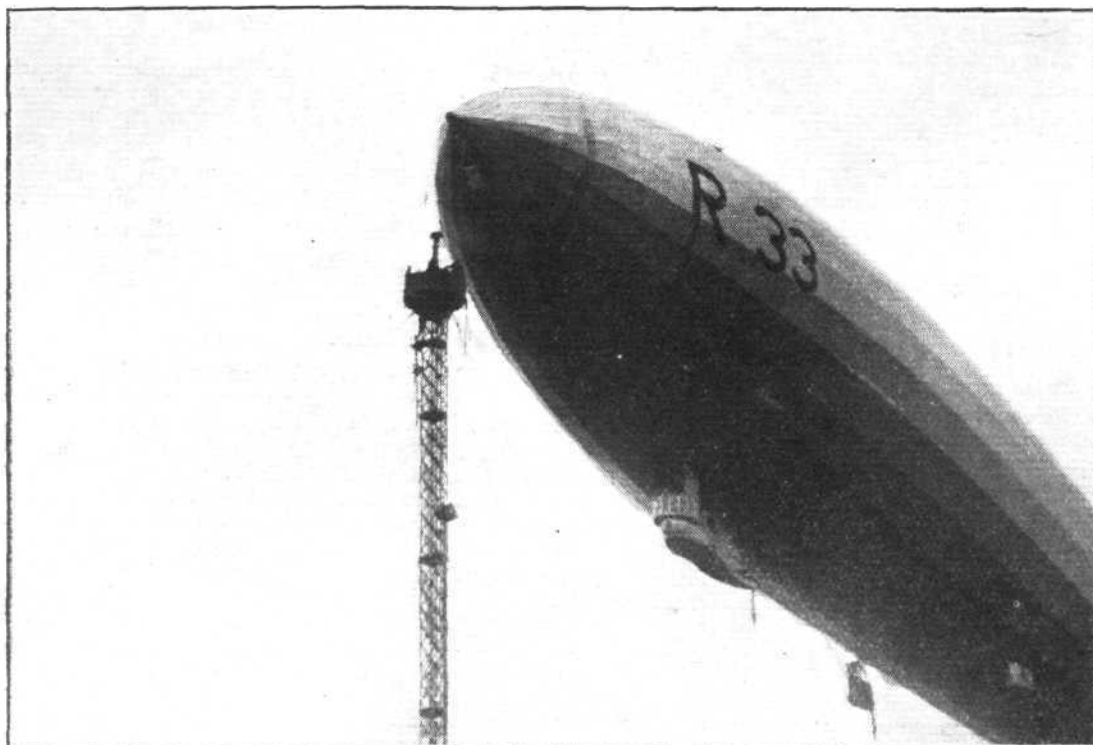
"At the present stage of development nearly all aircraft design and aero-engine design is still so amazingly amateurish from the point of view of the trained engineer that infantry officers and watch-keeping naval officers who have served for eight or nine or ten years in the Flying Services probably know quite enough to compete with such engineering knowledge as is possessed by the so-called aeronautical engineers of the aircraft industry—for, with a few notable exceptions, the aeronautical engineers themselves are only amateurs compared with mechanical, civil and electrical engineers in other industries."

We are entirely at a loss to understand the reasons which can have prompted such a slighting, totally misleading and inaccurate reference to the men who have, or had until, through no fault of theirs, it was lost, placed British aviation in the very forefront of aircraft development. To describe these men as "so-called aeronautical engineers," and aero engines such as the Napier and Rolls-Royces, the Bristols and Siddeleys, which are the envy of the world, as "amazingly amateurish" is surely to do British aviation, and the British aircraft industry in particular, a great disservice, more especially at a time when, as we have indicated above, the question of Britain's present position is being freely discussed in the press, and consequently being given a publicity abroad of which our competitors will not be slow to make capital. We offer a strong protest against such wholesale and unmerited slander, and we can only assume that the writer has in this case let his love of telling phrases get the better of his judgment.

“MANY CONGRATULATIONS, AIRSHIP”

THE short message of Sir Geoffrey Salmond to R.33 on the occasion of her "launch" from the airship shed at Cardington on Thursday, April 2, forms a fitting heading for the following brief notes dealing with the first steps in the resumption of practical airship work by Great Britain. Reference was made in FLIGHT last week to the re-conditioning of R.33 for research purposes, and the flight from Cardington to Pulham was the first beginning of what, it is hoped, will be

It had originally been intended that R.33 should leave her shed at Cardington on the morning of April 1, but weather conditions prevented this from being carried out. Those in charge of operations very wisely refused to take any risks, and, in view of the fact that the ship had to be brought out tail first, this was undoubtedly a wise precaution. It must be realised that with the wind blowing across the doors of a shed the operation of walking an airship out into the open

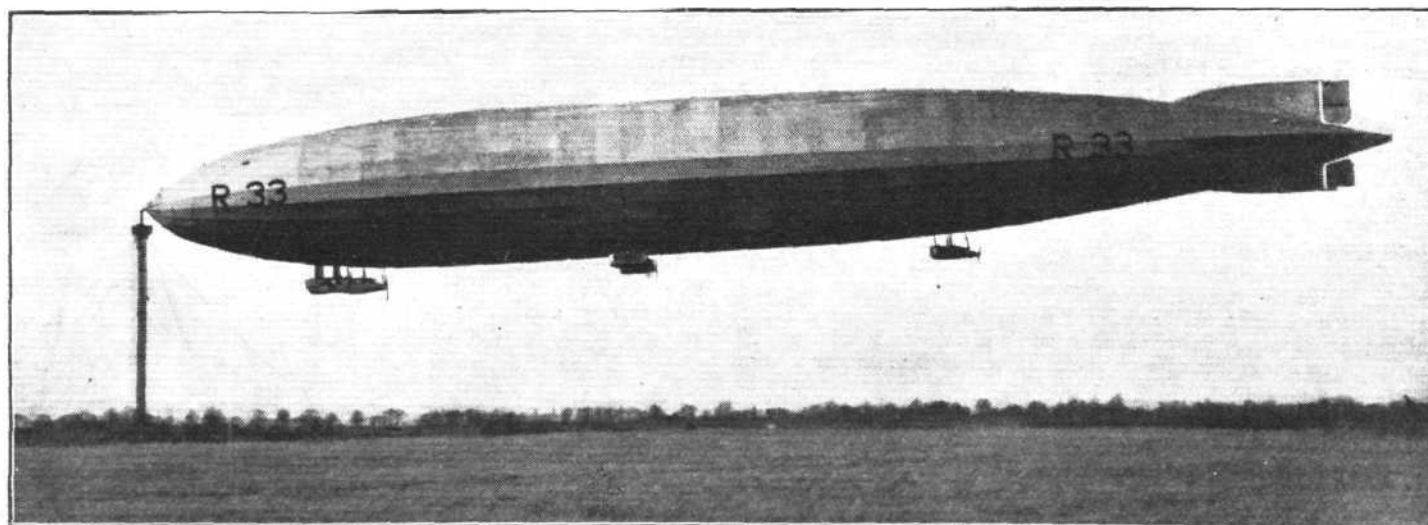


A "close-up" of the nose of the R.33 and the top of the mooring mast.

a strong policy of airship development. In itself there was, of course, nothing very startling in the fact that a rigid airship made a flight of a couple of hours or so, but as marking the revival of airship activity the flight was significant, nor should it be forgotten that, short as was this flight, it was considerably more meritorious than would appear on the surface. To begin with, those few airship pilots and engineers that remain to us after the cruel loss of R.38 had not had an opportunity of doing any flying for over three years, while as regards man-handling on the ground the personnel was entirely unskilled. That, in spite of these handicaps, the R.33 has been safely brought out of her shed at Cardington, has flown to Pulham and has there been safely moored to the mast is sufficient cause for congratulation, and we think for that reason all FLIGHT readers will join us in seconding Sir Geoffrey Salmond's message, placed at the head of these notes.

is a somewhat difficult one, and that even a fairly light gust may very easily cause the airship to be blown against the doors or frames, with possibly considerable damage to the airship's structure. On the morning of April 2 there was practically a flat calm, and a party of men and girls numbering close upon 300 succeeded in walking the ship out of the shed. Once in the open the engines were started, but the ship was permitted to float away on the slight breeze and to rise to about 300 ft. before the clutches were let in and the airship commenced to gather speed. It was about a quarter to six when the order was given to man the handling lines, and at two minutes past six the airship had cleared the doors and was once more in its element.

In the control car, as the ship was walked out, was Flight-Lieutenant Irwin, who was captain of the airship, and with him was Flight-Lieutenant Johnstone as navigator. The only passengers carried were Group-Captain Fellowes, Director



SAFELY MOORED: R.33 at her mooring mast at the Pulham Airship Station.

of Airship Development, and Mr. Wyn-Evans, Officer-in-Charge of Design and Construction. Major Scott, Officer-in-Charge of Flying, and Flight-Lieutenant Booth, First Officer, remained on the ground to direct operations until the ship was clear of the shed. They then boarded her and the order was given to let go.

For about two hours the airship cruised around in the Cardington neighbourhood, and at eight o'clock she came in low over the aerodrome and sent the message: "Am proceeding Pulham, everything O.K." Received by Cardington, this message was conveyed to Air Vice-Marshal Sir Geoffrey Salmond, who had motored down to Cardington during the night so as to be present at the start, by Squadron-Leader Colmore and Lieut.-Colonel Richmond. The airship was soon lost to sight, and later it was learnt that she had arrived over Pulham air station, Norfolk, at 9.10 a.m. She did not at once make for the mooring mast, but cruised around over the neighbourhood. By this time the wind had freshened, and the spectators were not entirely without uneasiness.

It was nearly a quarter to eleven before the airship came in low and dropped her mooring cable, the end of which was secured to the cable from the masthead. The cables were then slowly wound in by two Maybach engines, and at 11.30

the airship was made fast to the masthead. The mooring mast problem has been to a very great extent solved by the method, devised, we believe, by Major Scott, of approaching the mast, dropping a cable from the bows, the ground end of the cable being made fast to the outer end of a cable laid along the ground from the mast, inside which it passes down to winches. To steady the airship when drawn fairly close to the mast two yaw guys are also dropped from the airship, the ground crew thereby being enabled to steady the nose of the ship against lateral swaying. On Thursday it looked for some little time as if the airship might overshoot the mast, which swayed rather alarmingly, and the mast crew came in for favourable comment on the *sangfroid* with which the cone was secured to its socket on the mast arm. In view of their inexperience, the performance was a very creditable one.

The R.33 will use Pulham as her base for the series of experimental test flights about to be undertaken. Reference was made to these last week, and it may be recollected that they are to ascertain the stresses to which the framework is likely to be subjected during flight, so that the information thus gained may be used in the design of the larger airships which are to be built during the next two years.

ROYAL AIR FORCE CADETSHIPS

THE Air Ministry announces:—A competitive examination for not less than 35 cadetships at the Royal Air Force Cadet College, Cranwell, Lincs, will commence on June 23 next. The written examination will be held in London and certain other centres in the United Kingdom. Applications should be made to the Secretary, Civil Service Commission, Burlington Gardens, W. 1, and no form of entry will be accepted under any circumstances after April 23. It is to be noted that the age limits are now 17½ and 19½ years.

Candidates selected for cadetships as a result of this examination will go through a two years' course at the College, on satisfactory completion of which they will be granted permanent commissions in the General Duties Branch of the Royal Air Force. Full information as to the conditions of admission, examination, fees, and course of study at the College will be found in Air Publication 121, Regulations for admission to the Royal Air Force Cadet College, which can be obtained through any bookseller or direct from H.M. Stationery Office, Adastral House, Kingsway, W.C. 2, price 1s. net.

This is the first competition to be held under a revised scheme of examination. Under this new scheme candidates other than those nominated by the Air Council and those who have failed at previous entrance examinations will be required to produce school certificate A or B, obtained by passing certain examinations. All candidates will be required to attend before an Interview Board at the Air Ministry.

Candidates will be medically examined by the Central Medical Board of the Royal Air Force. It has been found in previous examinations that certain candidates have failed to attain the standard of fitness required owing, it is thought, to their having neglected to take proper exercise while preparing for the educational examination, and it is therefore desired to direct the attention of candidates to the care of their health in this respect. Parents and guardians are strongly recommended, in order to lessen the chance of subsequent disappointment, to have their sons or wards examined previous to their becoming candidates for commissions in the Royal Air Force, by a preliminary Royal Air Force Medical Board or by a private medical practitioner.

The fees at the Cadet College are £75 a year, and in addition

a contribution of £80 is required before proceeding to the College and one of £20 before the commencement of the third term to cover the expenses of uniform and books. Cadets receive pay at the rate of 5s. a day during their first year at the college, and at the rate of 10s. a day during their second year. In addition, an allowance of 1s. a day will be made during college terms towards the cost of messing, washing, etc. On being granted commissions in the Royal Air Force cadets receive the rank of pilot officer with total emoluments amounting at present to approximately £450 a year, and after 18 months' service they are eligible for promotion to flying officer with emoluments amounting at present to approximately £540 a year. These rates of emoluments are, however, liable to revision. As the unavoidable expenses to which officers are put in the Royal Air Force are kept strictly within moderate limits, no candidate need be deterred from applying for a commission by the fact that he has no private income.

Reduced fees are payable in certain circumstances for the sons of officers and men of the fighting services. No contributions towards uniform, etc., are payable for King's Cadets or Prize Cadets; the former also pay no fees, the latter are received at the reduced fee of £20 a year. King's Cadetships may be granted to sons of officers who have died in action or in certain other circumstances and have left their families financially reduced. Prize Cadetships (of which two will be offered at the forthcoming examination) are awarded to successful candidates in order of merit at each examination. In addition, one "Sir Charles Wakefield" Scholarship of the value of £75, tenable for one year, will be offered for competition at the forthcoming examination among candidates whose parents or guardians are in reduced circumstances.

Candidates sitting for cadetships at the Royal Air Force Cadet College may, at the same time, sit for cadetships at the military colleges, Woolwich and Sandhurst, and for cadetships in the Royal Navy, provided they fulfil the conditions laid down by the War Office and Admiralty respectively. They will be required to state their order of preference before the examination, and will be offered their first, second or later choice, according to their success at the examination.

Portuguese Flight to Africa

THE Portuguese military airman, Capt. Pinheiro, and Lieuts. S. de Silva and Manuel Gouveia, who left Lisbon for Portuguese Guinea on March 27 in a Breguet biplane, have arrived at Bolana, in that country. Further to our report last week in connection with the accident to another machine which was accompanying the airmen from Barcarena, it is announced that one of the passengers, a Portuguese journalist, has since died as a result of injuries received.

Civil Aviation in Czechoslovakia

UNDER the auspices of the Czechoslovak Ministry of Public Works, a special committee has been formed representing the Government, the aircraft industry, transport companies, and the banks for the purpose of drafting a scheme for the pro-

motion of an air navigation company in Czechoslovakia. A capital of 10,000,000 kc. is proposed, some of which will be provided by the State in the form of aerodromes, wireless equipment, etc.

Royal Air Force Flying Accident

THE Air Ministry regrets to announce that as a result of an accident at Caterham to a "Snipe" machine of No. 32 Squadron, Kenley, on 25th instant, Pilot Officer Ian Malcolm Scott, the pilot of the aircraft, was killed.

As a result of an accident at Quetta, India, to a Bristol Fighter of No. 28 Squadron, Quetta, on March 30, Flying Officer Thomas Donald Berridge, the pilot of the aircraft, was killed and No. 831034 A.C.2 Alexander Bidmead was seriously injured.

LIGHT 'PLANE AND GLIDER NOTES

JUST as we go to press it is learned that the Aircraft Disposal Co.'s "Cirrus" engine, described and illustrated in *FLIGHT* of February 26, 1925, has passed its Air Ministry type tests. No detailed particulars are yet to hand, but we understand that the test was one of 100 hours' duration, and that the 60 h.p. "Cirrus" passed with flying colours. Not a single sparking plug had to be changed, so that it does not appear that the absence of dual ignition is any great drawback. A prolonged test run with the engine driving a propeller was also carried out in order to determine whether or not the rear cylinder was inclined to overheat. This was not found to be the case, and thus seems to dispose of the theory that four-cylinder in-line air-cooled engines are likely to give trouble owing to uneven cooling. We hope to be in a position to give the full test results in next week's issue of *FLIGHT*. Probably the next piece of news will be that the de Havilland "Moth" has been granted an airworthiness certificate, and in that case some rather startling performances may be expected, calculated to demonstrate the reliability of the "Cirrus-Moth" combination.

APPROPOS the "Moth," this was taken by lorry to Croydon the other day to give demonstration flights, road transport having to be employed because the machine is not yet officially "blessed." In unloading the machine a plank broke and the "Moth" was dropped fairly heavily to the ground, sustaining a certain amount of damage. However, this has now been repaired, and the machine will probably soon be heard of again.

In France the general topic of conversation in aviation circles is the winning (or not), by Drouhin, of the Solex Prize for a flight from Paris to Rouen. It may be recollected that in *Light 'Plane and Glider Notes* on January 3, 1924, we published brief particulars of the Solex Prize, offered by the

manufacturers of the Solex carburettor for a flight from Paris to Rouen using only one kilogramme of fuel and oil. If the prize was not won by April 1, 1925, it was to go to the pilot who first covered the distance, providing the consumption did not exceed 3 kgs. of fuel and oil.

THERE were probably few who seriously believed that the flight was possible on the 2.2 lbs. of fuel, and as we said at the time, the second clause in the regulations practically nullified the main conditions. The distance from Paris to Rouen is roughly 90 kilometres (56 miles) and it was covered by Drouhin on a Farman light monoplane with three-cylinder radial Salmson engine in 1 hour 20 minutes. The actual fuel consumption was found to be so nearly the 3 kgs. permitted that it will be for the *Laboratoire des Arts et Metiers* to say whether or not Drouhin has, in fact, won the prize. The general opinion is that he has just managed to do so.

THE flight from Paris to Rouen started from a small field belonging to the Lorraine-Dietrich Co., and situated behind their works at Argenteuil. There was a strong following wind, and Drouhin flew low. He stated afterwards that he experienced considerable up-currents, which repeatedly raised him from about 100 metres to roughly 300 metres. By thus gaining height and potential energy he was able to throttle his engine well back, and at no time, he stated, was he taking more than 8 or 10 h.p. from it. The actual consumption is stated to have been somewhere in the neighbourhood of 4 litres (0.88 gallons). If this figure is correct the consumption works out at roughly 63½ miles per gallon, which is certainly not impossible. Thus the single-seaters at Lympe in 1923 did as much as 87½ miles per gallon, measured over a triangular course where a head wind was encountered over parts of the course. The Paris-Rouen flight was, we gather, made with a strong following wind.

LIGHT 'PLANE

WE shall be pleased to have reports regularly from Club Secretaries, or those directly connected with new Light 'Plane Clubs, so that by keeping our readers informed on this matter the whole movement may be helped forward to the benefit of the clubs and the popularising of "that Air feeling."

Light 'Plane Clubs are being, or have been, formed at:—

London.—Lieut.-Com. H. E. Perrin, Secretary, Royal Aero Club, 3, Clifford Street, W.1.

Birmingham.—Major Gilbert Dennison, Hon. Secretary, Midland Aero Club, Handsworth, Birmingham.

Glasgow.—J. Allison, Esq., Jr., 219, St. Vincent Street.

Lancashire.—C. J. Wood, Esq., Secretary, Lancashire Aero Club, c/o A. V. Roe and Co., Newton Heath, Manchester.

Newcastle-on-Tyne.—Alex. H. Bell, Esq., Hon. Sec., Newcastle-on-Tyne Light 'Plane Club, County Hotel.

Yorkshire.—J. F. Barnes, Esq., Yorkshire Aeroplane Club, 39, Swan Arcade, Bradford.

We have received the following reports on the progress being made:—

Lancashire Aero Club.—The Special Committee who were appointed to deal with the Air Ministry questionnaire have now returned this completed; they have also forwarded an estimate of income and expenses. A copy of the form, etc., as returned to the Air Ministry, may be seen on the notice board at the Club's headquarters.

An "Inner Circle" Airway

IMPERIAL AIRWAYS will operate a novel air service this summer. This will be known as the Aerial Inner Circle, and will consist of a daily service from London to London via Paris, Cologne and Amsterdam. The return journey will be made via Amsterdam, Cologne and Paris! It is expected that the journey, in either direction, will take 12 hours.

Air Raids on Indian Frontier

A MESSAGE from Simla states that the intensive bombing operations carried out on the North-West Frontier by three squadrons of the Air Force during the last three weeks from

CLUB DOINGS

The headquarters at the Nag's Head Hotel is now established. Members are making it a custom to take lunch there whenever possible; on Tuesdays and Fridays there are usually about fifteen or twenty members having lunch. The Headquarters Committee wish to point out that the Club-room is open every day, and every evening, except Tuesday, when it is reserved for committee meetings. The flying and motoring papers are taken, and meals are served in the private dining-room reserved for members and friends. Members are finding the headquarters a convenient meeting place, and it is a help for those who do not know many of the members to get in touch.

The L-P-W glider is to be brought on Saturday, March 28, to the new workshop at Didsbury, Broadbents Garage. Members are advised to see the notice board, where it will be stated on what nights work on this machine will be carried on.

The 504K Avro biplane, with 80 Renault engine, has been despatched from Aintree, and will be delivered any day.

On Wednesday, March 25, the Chairman entertained the last year's committee to dinner at the Manchester, Ltd., Restaurant. The following were present: Messrs. A. Ainsworth, Mark Lacayo, D. F. Dyson, D. Salthouse, Rex Williams, C. Wood (the secretary) and John Leeming (chairman). Mr. T. Prince was unfortunately unable to be present, but sent a wire from Sealand aerodrome explaining he had been detained.

Tank have been most successful. In addition to the return of two captured Hindus certain tribes have paid up their fines. The Abdurrahman Khel, who are more inaccessible owing to their living in caves, have still not completely complied with the Government's terms; therefore operations are continuing.

Oslo-Copenhagen Air Service

FROM May 1 the daily aerial mail passenger route will be opened between Oslo and Copenhagen, via Gothenburg, bringing Norway and Southern Sweden in direct connection with the Continental air routes.

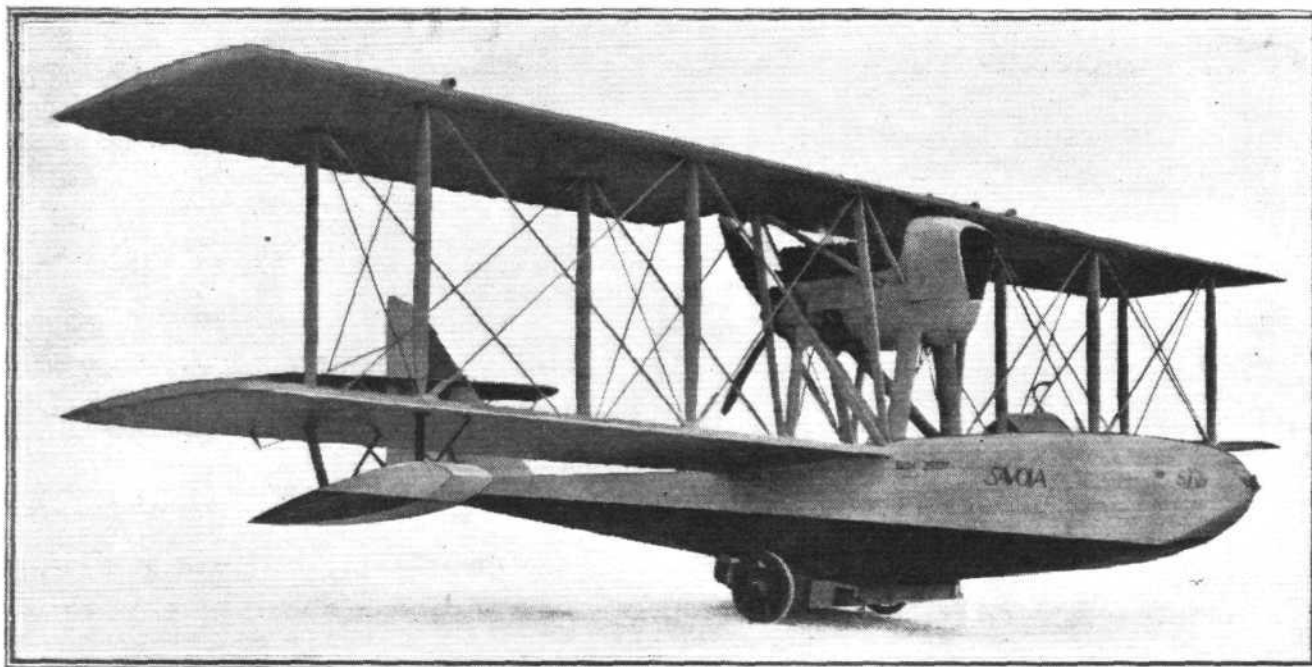
THREE "SAVOIA" SEAPLANES

ONE of the best-known, and perhaps the most active, of the Italian aviation concerns is the Società Idrovolanti Alta Italia (S.I.A.I.), which has its works at Sesto Calende and offices in Milan. During the War the original Savoia company was responsible for an enormous output of aircraft and components. Since then the S.I.A.I. has produced a number of successful and interesting machines, mainly of the flying boat type.

These machines cover a wide range, as regards their sphere of usefulness, as may be gathered from the following list of

boat, fitted with two 200 h.p. S.P.A. engines—a modern version of the S.23. S.55, Twin-engined Twin-hull Torpedo and Mine-laying flying boat, fitted with two 400 h.p. Lorraine-Dietrich engines. S.56, Training Tractor flying boat, fitted with an 80 h.p. Le Rhone engine. S.57, Fast Reconnaissance flying boat, fitted with a 300 h.p. Hispano-Suiza engine. S.58, Single-seater Fighter flying boat, fitted with a 300 h.p. Hispano-Suiza engine.

It is not our intention to give a description of each of these machines, but we give this week some brief particulars,

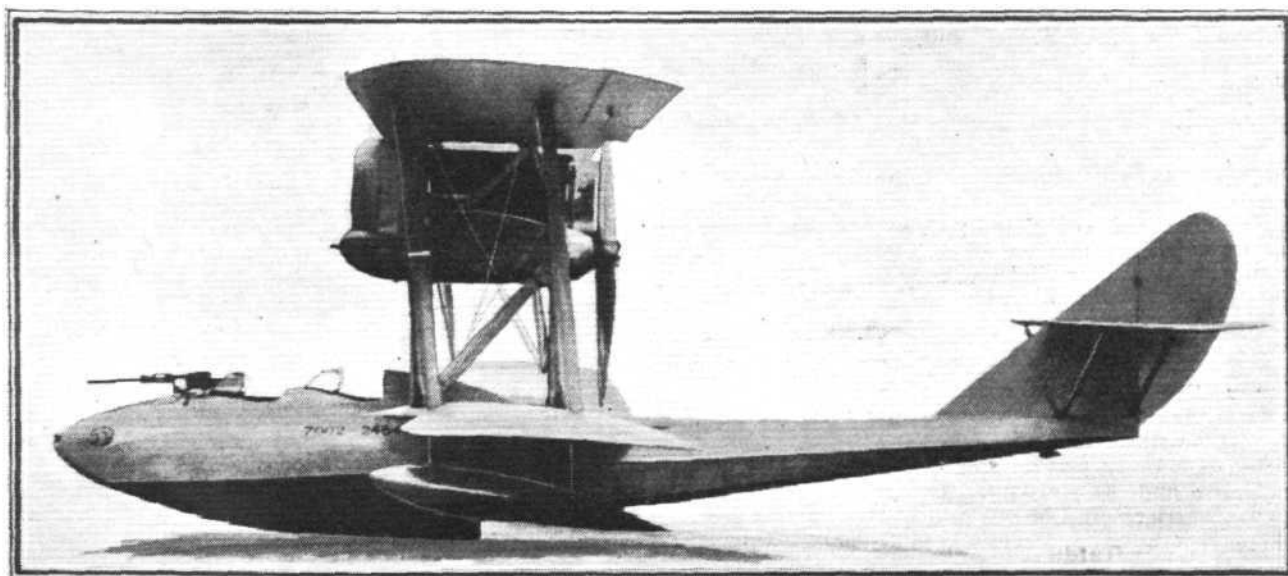


Three-quarter front view of the Savoia S.16ter, a bombing and reconnaissance flying boat fitted with a 400 h.p. Lorraine-Dietrich engine.

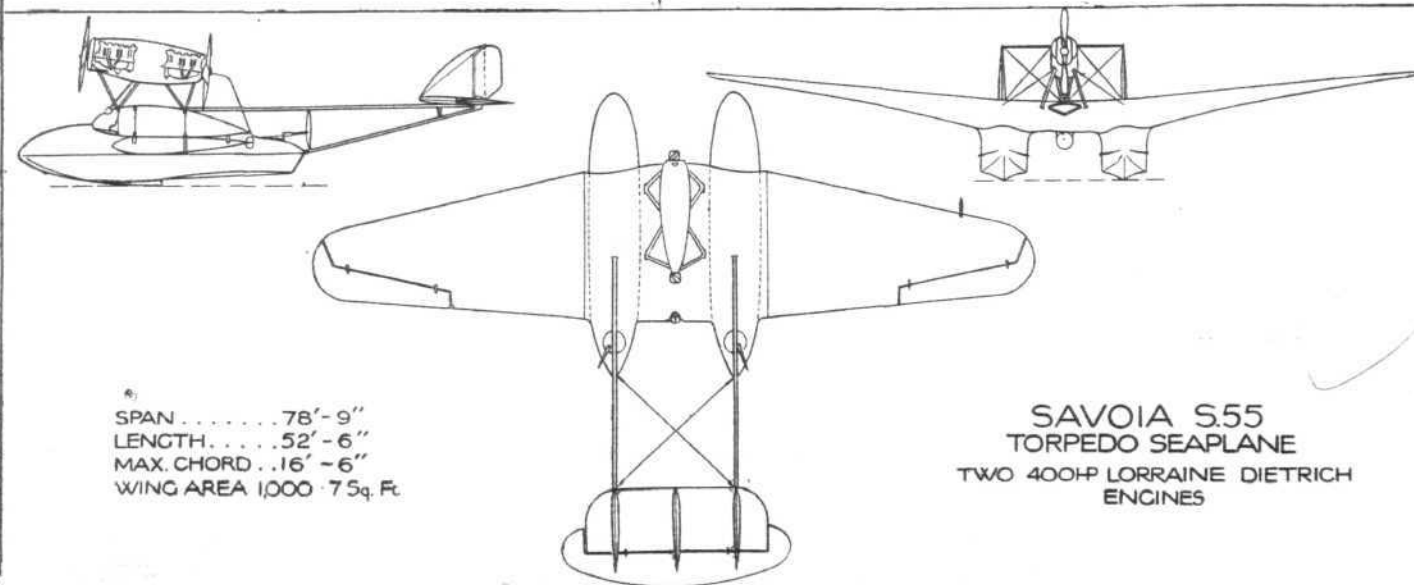
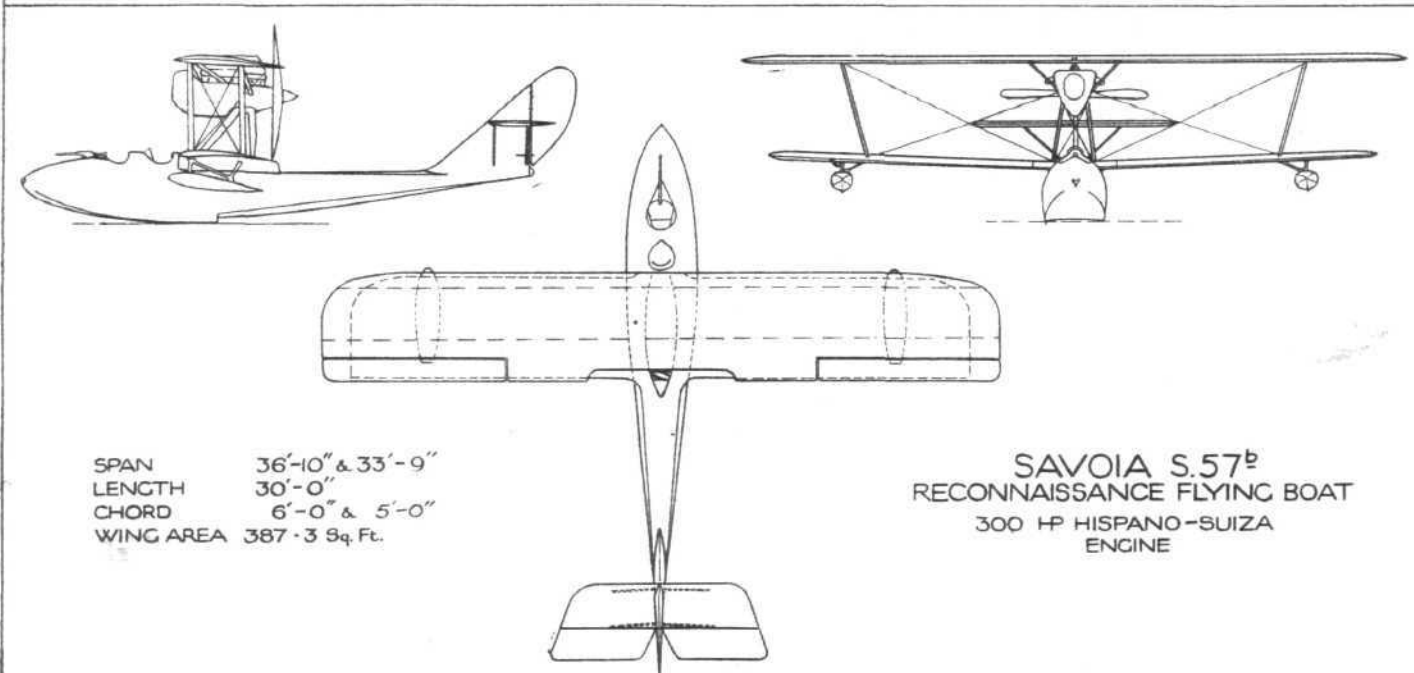
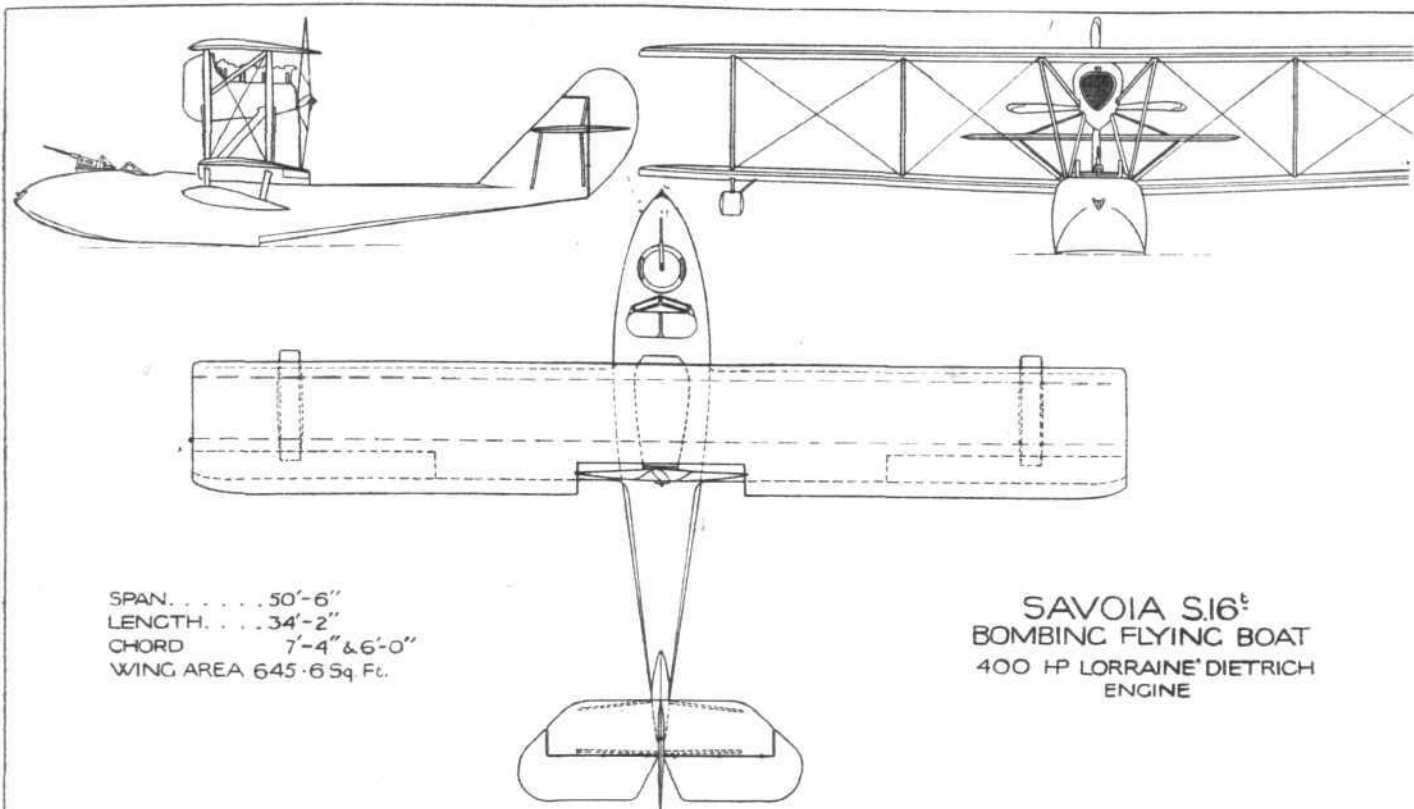
the principal types that have been produced. S.16ter (a modern version of the original S.16 model), Bombing and Reconnaissance flying boat fitted with a 400 h.p. Lorraine-Dietrich engine. S.23, School or Sporting flying boat, fitted with a 160 h.p. Isotta engine and dual control. S.24, Twin-engined Bombing flying boat fitted with two 300 h.p. Fiat A.D.C. engines in tandem. S.51, High-speed sesquiplan flying boat, fitted with a 300 h.p. Hispano-Suiza engine—it was this machine that, piloted by Passaleva, finished second in the 1922 Schneider Cup race at Naples. S.52, Tractor-fuselage Fighter biplane (land), fitted with a 300 h.p. Hispano-Suiza. S.53, Twin-engined Bombing flying

together with illustrations of three representative types, viz., the S.16ter, the S.55 and the S.57. Perhaps the most interesting of these three is the S.55, so we will deal with this first.

As may be seen from the accompanying illustrations, the general design of the S.55 is decidedly original, but it is one, nevertheless, possessing several features that render the machine a sound practical proposition for the job for which it was intended, *i.e.* torpedo launching and mine laying. It is a thick-section cantilever monoplane, having twin boatlike hulls ("bat-boat" type) carrying the centre-section of the wings and forming one unit with the latter. Above the



Side view of the Savoia S.57 fast reconnaissance flying boat fitted with a 300 h.p. Hispano-Suiza engine.



THREE SAVOIA SEAPLANES : General arrangement drawings of the S.16ter, the S.57 and the S.55.



Three-quarter front view of the Savoia S.55 torpedo and mine-laying mono-seaplane with twin boats and tandem engines (400 h.p. Lorraine-Dietrich).

centre section is mounted, by a system of M-struts, a streamlined nacelle containing the two 400 h.p. Lorraine-Dietrich engines, arranged in tandem, the front one driving a tractor screw and the rear one a pusher screw. It will be observed that the engine nacelle is inclined so that the line of thrust of the engines is some 8 deg. out of the horizontal, and a slight upward pull or push is exerted. No doubt this is done in order to direct the slipstream on to the tail—the engines, necessarily, being fairly high in this machine. Cooling of the engines is effected by a radiator mounted in the nose of the nacelle.

The pilot's cockpit is located in the leading edge of the centre section, the wing at this point having a maximum depth of about 3 ft. Underneath in the middle of the centre section is mounted the torpedo, or mine-laying gear, there being a clear space of about 8 ft. between the two hulls for this purpose. The span of the centre section is 19 ft. 4 ins., and the chord at this point is 16 ft. 6 ins.

The outer wing sections, which have a pronounced dihedral angle, taper sharply from root to tip, both as regard chord and thickness—the chord and thickness at the tip being 9 ft. 9 ins. and 8 ins. respectively. The leading edge sweeps back some 15°, while the trailing edge is only slightly inclined. Balanced ailerons of the inclined axis type are employed for lateral control.

The tail surfaces are carried by two pairs of V-outriggers from the centre section and the hulls. The top beam of each V is attached to the upper surface of the centre section, near the rear main spar, while the lower beam is attached to the stern-post of the hull. The two V's are cross-braced, and in addition each has a vertical strut at its forward and rear ends. Mounted on the top of the horizontal stabilising

surface—which is of rectangular plan form, of 97 sq. ft. area—are three triangular vertical fins, to the trailing edges of which are hinged balanced rudders.

As regards the two hulls or boats, which are spaced about 13 ft. apart, these are a little over half the total length of the machine—being, in fact, about 30 ft. 6 ins. long, and having a beam of 5 ft. 3 ins. They are of the single-step V-bottom type, and are so constructed that if desired they can be formed into cabins, accommodating 12 passengers, for commercial work. A gunner's cockpit is provided in the stern of each of the hulls, from which a very good range of action is obtained.

An important feature of the S.55 is that it is very easily dismantled for transport—the wings being in three detachable sections, each of the hulls can be detached from the centre section, while, of course, the tail unit is easily dismantled. The engines may readily be inspected, even during flight, and one is sufficient to maintain the machine in the air.

The main characteristics of the S.55 are as follows:—

Span	78 ft. 9 ins.
Chord	16 ft. 6 ins. to 9 ft. 9 ins.
O.a. length	52 ft. 6 ins.
Height	16 ft. 6 ins.
Wing area	1,000·7 sq. ft.
Weight empty	8,158·5 lbs.
Weight loaded	12,568·5 lbs.
Weight/sq. ft.	12·5 lbs.
Weight/h.p.	15·7 lbs.
Speed range	56 to 130 m.p.h.
Climb to 3,000 ft.	3 mins.
Climb to 16,000 ft.	60 mins.
Range of action	5 to 10 hours

The Savoia S.55 twin-boat mono-seaplane in flight, launching its torpedo.



Turning now to the other two machines, these are both, generally speaking, of the familiar Savoia flying boat type, differing in design according to the requirements of the duties imposed on each. The S.16ter, which we will deal with next, is a modern version of a comparatively old and successful Savoia flying boat. Among the most recent successes of this type may be mentioned the flight across Europe and over the Alps, made by a section of three flying boats of the Italian Military Air Force, and which returned to Italy without having had any trouble, in spite of the bad weather encountered at the time (July, 1924); and also the world's height record for flying boats with 500 kgs. (1,102.5 lbs.) made on August 25, 1924, by Centurone with an altitude of 4,597 m. (15,078 ft.). The new S.16 model, besides the improved characteristics in flight and in water, is also provided with wireless equipment, camera, machine-gun mounting, bomb racks and all latest installations. The most important modification, however, is the fitting of the 400 h.p. Lorraine-Dietrich engine, which considerably improves the take-off and the manoeuvring abilities. It is primarily intended for bombing and reconnaissance work.

As may be seen from the illustrations, the S.16ter is an orthodox biplane flying boat, with equal span wings, having four-bay bracing (excluding the small centre section carrying the engine). The lower plane, which is about 8 ins. less in chord than the top one, is set at a dihedral angle, and is provided with wing tip floats.

The hull is of the single-step type, with concave bottom and a sharply tapering stern. It is provided with two cockpits in the bows, the pilot's just forward of the main planes and the gunner's immediately in front of this and fitted with a machine-gun ring.

The 400 h.p. Lorraine-Dietrich engine, driving a pusher air screw, is mounted in a partly enclosed nacelle, with nose radiator, supported above the hull by two pairs of N-struts. In other respects this machine follows usual practice.

The principal characteristics of the S.16ter are:—

Span	..	..	..	50 ft. 6 ins.
Chord	..	..	..	7 ft. 4 ins. (top), 6 ft. (bottom).
Overall length	..	..	..	34 ft. 2 ins.
Wing area	..	..	..	645.6 sq. ft.

Weight empty	..	..	..	3,682.5 lbs.
.. loaded	..	..	..	5,667 lbs.
.. per square foot	..	..	..	8.75 lbs.
.. per horse-power	..	..	..	14.1 lbs.
Speed range	..	..	..	56-118 m.p.h.
Climb to 3,000 ft.	..	..	..	3 mins. 30 secs.
.. to 16,000 ft.	..	..	..	55 mins.
Range of action	..	..	..	4-6 hrs.

The Savoia S.57bis is a high-speed reconnaissance two-seater flying boat, and differs from the previous machine (S.16ter) not only as regards size, but in the general design, although in most respects it follows usual Savoia practice. It is a pusher biplane of the two-bay type, and the top plane, which is "straight," is very slightly larger in span and chord than the lower plane. The latter is set at a dihedral angle and is provided with wing-tip floats. The single pair of interplane struts on each side is inclined slightly outwards, so that the overhang of upper and lower planes is about the same. Unbalanced ailerons are fitted to the top planes only.

The 300 h.p. Hispano-Suiza engine is mounted in a semi-enclosed nacelle, as on the S.16ter. The tail surfaces include a raked, rectangular, stabilising surface with divided but unbalanced elevators, and a triangular, vertical fin and unbalanced rudder.

As regards the hull, this is very much the same as that of the S.16ter, the pilot's and gunner's cockpits being arranged in tandem well forward of the main planes.

The principal characteristics of the S.57bis are:—

Span	..	..	..	36 ft. 10 ins. (top), and 33 ft. 9 ins. (bottom).
Chord	..	..	..	6 ft. (top) and 5 ft. (bottom).
Overall length	..	..	..	30 ft.
Wing area	..	..	..	387.3 sq. ft.
Weight empty	..	..	..	2,315.25 lbs.
.. loaded	..	..	..	1,212.75 lbs.
.. per square foot	..	..	..	9 lbs.
.. per horse-power	..	..	..	11.3 lbs.
Speed range	..	..	..	59-145 m.p.h.
Climb to 3,000 ft.	..	..	..	2 mins. 55 secs.
.. to 16,000 ft.	..	..	..	48 mins.
Range of action	..	..	..	5 hrs.

THE INTERNATIONAL COMMISSION FOR AERIAL NAVIGATION

THE International Commission for Aerial Navigation opened its eighth session on April 3 in London, at the Industrial Court, for the purpose of considering a number of conclusions presented by the various sub-commissions. Representatives of about nine countries were present, including Belgium, France, Italy, Czechoslovakia, Poland, Bulgaria, the Kingdom of Croates, Serbs and Yugo-Slavs, and Japan. The proceedings were conducted in private, and a formal welcome was accorded the Commission by the Prime Minister. Sir Sefton Brancker was in the chair, and the British delegation present included Capt. Goodman Crouch (Technical Sub-Commission), Gp.-Capt. Blandy (Wireless Telegraphy), and Mr. R. L. Megarry (Legal Sub-Commission). The principal problems discussed included the standards of airworthiness, the unification of maps, etc.

All the delegates were the guests of the Fairey Aviation Co. at the lunch to Wing-Comdr. Goble (reported elsewhere in this issue) held that afternoon, and in the evening they attended a dinner given by the Government at Lancaster House, on which occasion 22 countries were represented. Sir Philip Sassoon, Under-Secretary for Air, presided. The following day the session was resumed, again in private.

On Monday, April 6, the closing meeting of the session was held in public, and the conclusions reached during the session were announced. In the present issue, we can only refer but briefly to the proceedings of the final meeting, but will

give fuller particulars next week. Sixteen of the 26 states which signed the Convention of 1919 were represented, and the president on this occasion was Sir Sefton Brancker.

The principal decisions announced included the following:

To approve of the application for a derogation from Article 5 of the convention made by the Polish Government.

To adopt a further chapter of the regulations concerning the minimum requirements for airworthiness certificates.

To hasten the revision of the meteorological annex to the convention.

To continue the unification of terms and symbols used in aeronautical technics.

To confirm the exclusion of women from any employment in the operating crew of aircraft engaged in public transport.

To modify in the near future the regulations relating to air traffic.

To continue the study of various questions, particularly (1) that of the composition of the operating crew on board aircraft; (2) that of the maintenance of the airworthiness of aircraft; and (3) that of the unification of the characteristics required in respect of materials used in aeronautical construction.

At the conclusion of the meeting, the delegates, as guests of the Government and Air Ministry, paid a visit to the Royal Aircraft Establishment at Farnborough, where non-stalling aeroplanes were seen.

Brussels-Congo Flight Concluded

LIEUT. THIEFFRY, the Belgian military airman, who set out from Brussels on February 12 to fly to Belgian Congo in a three-engined Handley Page biplane, has reached his destination safely. He arrived at Kiushasa, Stanley Pool, on Friday, April 3, having covered some 5,000 miles in 13 stages over a period of 51 days.

A Special Prandtl Issue

OUR German contemporary, *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, has published, on the occasion of Professor Prandtl celebrating his fiftieth birthday, a special

"Prandtl Sonderheft." The number contains a brief sketch of Prandtl's life and work by Professor v. Karman, of Aachen, a list of Prandtl's written works, an article on the flutter of single-spar wings by Blasius, an account of certain recent work at Göttingen by Ackeret, including certain work on the rotor, an article on the rotor ship by Flettner, a brief study of the possibilities of applying the rotor to aircraft by Pröll, of Hannover, in which he arrives at the conclusion that the rotor could only usefully be applied to very slow aeroplanes, and several more highly technical articles on aerodynamic subjects. The issue of the *Z.F.M.* is well worth obtaining. It is published by R. Oldenburg, of Munich.

AWARD OF BRITANNIA TROPHY

Wing-Commander Goble Entertained at Luncheon

FOR the first time in history the presentation, according to the award by the Royal Aero Club, of the Britannia Trophy, was made the occasion of a celebration, when, on Friday last, April 3, Wing-Commander Goble was entertained at a luncheon given by the directors of the Fairey Aviation Company, at the Savoy Hotel. The Britannia Trophy, offered by Mr. H. Barber, of "Valkyrie" fame, has, as announced in FLIGHT last week, been awarded to Wing-Commander Goble, of the Royal Australian Air Force, and his pilot Flight-Lieut. McIntyre for their flight around Australia in a Fairey IIID seaplane with Rolls-Royce "Eagle" engine, as the most meritorious performance during 1924. The previous holder of the Britannia Trophy was, it may be remembered, Mr. Alan J. Cobham.

A very distinguished company had gathered to celebrate the presentation of the Trophy to Wing-Commander Goble, Mr. C. R. Fairey, M.B.E., being in the chair. In proposing the toast, "Our Guest, Wing-Commander Goble, C.B.E., D.S.O., D.S.C., R.A.A.F.," Mr. Fairey said it was his great privilege to express their appreciation of the flight for which Goble and McIntyre had been awarded the Britannia Trophy, and he was also very pleased to be able to welcome to the gathering the members of the International Commission for Aerial Navigation. With regard to the flight around Australia, Mr. Fairey recalled that the machine on which the flight was made had been at an Australian air station for three years before the flight was undertaken, and that the flight, which covered something like 9,000 miles, had occupied 90 flying hours. The flight, mostly along wild coast lines or over vast stretches of sea, had been carried out with very little forward organisation, and its successful conclusion reflected the greatest credit on the crew. The flight came, Mr. Fairey said, at a very opportune moment. He recalled the many great flights following the first year or two after the War, and paid a warm tribute to the Australian aviators, who carried out several of these flights, such as the "glorious failure" of Harry Hawker (Newfoundland-England), the success of Sir Ross and Sir Keith Smith (London-Australia), and the privately-undertaken flight to Australia of Parer and MacIntosh. Then followed several years during which we were outnumbered and outshone as compared with some other nations, and our supremacy was lost. Wing-Commander Goble's flight did a great deal towards restoring British prestige, and it was now a matter for the general public and for the House of Commons to insist that our lost supremacy in the air be regained. One thing could be said without fear of contradiction, and that was that British pilots were still the finest in the world.

The Duke of Sutherland, in presenting the Britannia Trophy, recalled that this had been offered by an early British pioneer, Capt. Barber, and had been held by a number of aviators, commencing in 1913 with Capt. (as he then was) Longcroft, for a flight from Montrose to Plymouth. In 1914 and the War years there was no award, but in 1919 the Trophy was awarded to Alcock for his flight across the Atlantic; in 1920, Hinkler secured it for his flight from London to Turin non-stop in the Avro Baby; in 1921, there was no award, but in 1922 the Trophy went to Mr. Raynham for his two hours' glide at Itford. In 1923, the award went to Mr. Cobham, who had just completed another great flight, and now it would be held by Wing-Commander Goble for one year.

In replying, Wing-Commander Goble said that this was the most difficult part of the whole business, but he proceeded to show that in so saying he was far from being correct, for his brief speech was delivered with considerable fluency and without any apparent signs of nervousness. He paid a warm tribute to his pilot, Lieut. McIntyre, without whose skilful piloting the flight could not have been brought to a successful conclusion. Referring to the flight itself, he pointed out that in order to cover some of the stretches, it was necessary to overload the machine to a very considerable extent. This necessarily meant that personal belongings had to be reduced to a minimum, and all personal outfit was shared by him and McIntyre, with the exception of the toothbrushes. Success or failure, they were determined each to have his own. In spite of the varying climatic conditions, both engine and machine behaved perfectly. Not a single wire required adjustment, the wood stood up to the temperature changes, and the fabric remained taut. It was feared at first that with the heavy load carried, the machine would not get off the sea at Point Cook, let alone in the tropical districts, but actually the machine got away very well, and had very

nearly as good a performance in the tropics as in the more temperate zones. That the Rolls-Royce "Eagle" engine was none the worse for its arduous test was shown when it was stripped for examination after the flight, there being no signs of wear, and afterwards it was installed in a machine and flew 2,000 miles in a photographic survey of the Great Barrier Reef. The manufacturers of the Fairey seaplane and of the Rolls-Royce engine had done much to uphold the high reputation of the British aircraft industry in Australia.

Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., in proposing the toast "The Commonwealth of Australia," said he had always wanted to go to Australia, but somehow had never found the time for such a trip. His knowledge of the Dominion was not, therefore, a very intimate one, but it was said that lack of knowledge never yet prevented a member of Parliament from speaking, and as a member of a conservative Government he did not wish to break the tradition. He had a great respect for pilots and liked them very much, but when he came across one who was inclined to think himself a very fine fellow he always reminded him that there was one thing which he could not do, but which the common house fly did every day: landing upside down on the ceiling. Yet that was precisely what the Australian pilots were doing every day. Turning to a serious subject, he said he was going to say something which would not, he hoped, be considered impertinent, but, as Sir Joseph Cook was present, he felt the time had come to speak plainly on a subject that was causing considerable feeling in this country, and he thought the subject was one in which frankness was essential. He referred to the lamentable embargo imposed by the Australian Commonwealth on the exportation of "Ashes." Col. Brabazon then sat down amid applause and laughter.

Sir Joseph Cook, P.C., High Commissioner for Australia, complained that he had not been consulted at all, and had therefore made no preparation for a reply to the toast just given. He was happy to think that he had been personally associated with the initiation of the flight before leaving for England, and said there were now two commercial air services running in Australia, both of which were doing well and neither of which (he would "touch wood") had had a single mishap during their three years of operation. They had, he said, at Australia House a film of the Goble-McIntyre flight, and if any of the company would like to see it they would be welcome. In replying to the toast proposed by Lieut.-Col. Moore-Brabazon, he recalled that he (Col. Brabazon) was the first British aviator to obtain his pilot's certificate.

Mr. T. O. M. Sopwith said Sir Joseph Cook had complained that he had not been given notice that he was expected to speak. He (Mr. Sopwith) was in an even worse position in that he had not been asked to speak at all! He thought it only right that someone should propose "The Chairman." The Duke of Sutherland had referred to the Chairman's too great modesty. He (Mr. Sopwith) regarded Mr. Fairey as an honoured competitor, and said that the name of Fairey would go down in history as a milestone in British aviation. With regard to the flight around Australia, the fact that it was carried out without forward organisation rendered it all the more meritorious. This was the first occasion on which the presentation of the trophy had been celebrated in this fashion, and he hoped many more would follow.

Lieut.-Col. F. McClean said he was between the devil and the deep sea, as he was faced with the alternative of either having to make a long speech or else keep an appointment with his dentist. He had decided to go and "have it out" with the dentist, and would therefore confine himself to seconding the toast.

Mr. Fairey said he greatly appreciated the kind things said about him and his firm, and he would feel very gratified if it was considered that he had contributed in some small measure to the progress of British aviation.

A highly successful and enjoyable luncheon party then came to an end, and many of the guests took the opportunity of going to Australia House, where was shown a film of Goble's flight (or, at any rate, certain minute portions of it), followed by a film of the test match. Something like 200 guests were present at the luncheon, and it would be manifestly impossible for us to give their names. Among them were Air Vice-Marshal Sir Geoffrey Salmond, Air Vice-Marshal Sir Sefton Brancker, a number of foreign air attachés, members of the International Commission for Aerial Navigation, many representatives of the Air Ministry, and personal friends of the directors of the Fairey Aviation Company.

ROYAL AERONAUTICAL SOCIETY

(Official Notices)

THE 60th Annual General Meeting of the Royal Aeronautical Society was held at the Society's offices at 7, Albemarle Street on March 31.

In moving the adoption of the Council's report and the accounts, which showed a deficit for the year of £358 16s. 10d., the Chairman, (Lieut.-Col. H. T. Tizard) said that the Society had been passing through difficult times since the war which had culminated in the resignation of the Secretary, Lieut.-Col. W. Lockwood Marsh. The Council felt that the loss of a permanent Secretary was a serious matter but, after careful consideration of the possibilities of increasing the Society's income or decreasing its expenditure in other directions, had come to the conclusion that they had no other course but to accept the Secretary's resignation. The only possible way for the Society to pay its way was to lower the cost of administration and, much though they would feel the loss of Col. Lockwood Marsh, whose services to the Society and to aeronautics generally were well known, they must simply do the best they could with an Honorary Secretary, till better times came. What the Society really needed to put it into a stable position was an endowment fund of, say, not less than £10,000. He mentioned this in the hope that the appeal might not fall altogether on deaf ears. In regard to honorary officials he would like to record their great appreciation of the services of the Editor, Mr. J. L. Pritchard, who had been looking after the Journal for five difficult years, and had consistently declined to accept any honorarium for his services. In conclusion he referred to another matter of general importance. Negotiations had been going on for some

time with a view to the amalgamation of the Institution of Aeronautical Engineers with the Society, and he was hopeful that a satisfactory solution would be found. If the Councils of the two bodies agreed on a scheme it would be necessary for the agreement to be ratified at a special general meeting of the Society.

The adoption of the Council's Report was then formally moved and carried. On the motion of Wing-Commander T. R. Cave-Browne-Cave, seconded by Sir Henry White-Smith a resolution was adopted placing on permanent record the Society's great indebtedness to its retiring Secretary, Lieut.-Col. Lockwood Marsh, for his conduct of the Society's business during five exceptionally difficult years.

The following members were declared duly elected to the Council:—

Major-General Sir W. Sefton Brancker, K.C.B., A.F.C.; Mr. Griffith Brewer; Wing-Commander T. R. Cave-Browne-Cave, C.B.E., F.R.Ae.S.; Sir Mackenzie D. Chalmers, K.C.B., C.S.I.; Mr. C. R. Fairey, C.B.E., F.R.Ae.S.; Prof. C. F. Jenkin, C.B.E., F.R.Ae.S.; Major A. R. Low, F.R.Ae.S.; Major R. H. Mayo, O.B.E., F.R.Ae.S.; Mr. W. O. Manning, A.F.R.Ae.S.; Mr. J. D. North, F.R.Ae.S.; Lieut.-Col. M. O'Gorman, C.B., D.Sc., F.R.Ae.S.; Colonel the Master of Sempill, A.F.C., A.F.R.Ae.S.; Sir Napier Shaw, F.R.S., D.Sc., F.R.Ae.S.; Sir Henry White-Smith, C.B.E., Mr. T. O. M. Sopwith, C.B.E., A.F.R.Ae.S.; Mr. C. W. Tinson, A.F.R.Ae.S.; Mr. H. T. Vane; Major H. E. Wimpey, O.B.E., F.R.Ae.S.; Mr. R. McKinnon Wood, A.M.Inst.C.E., F.R.Ae.S.

W. LOCKWOOD MARSH, Secretary



To be Married

The engagement is announced between Flying Officer PATRICK JOHN BETT, R.A.F., late the Gordon Highlanders, eldest son of Mr. and Mrs. David Gordon Bett, of Hasketon, Woodbridge, Suffolk, and ELLEN GERALDINE, only daughter of Mr. and Mrs. ROBERT L. TOWGOOD, of Farm Hall, Godmanchester, Huntingdon.

The engagement is announced between Capt. H. A. COURTENAY, D.F.C., R.A.S.C., youngest son of the Rev. and Mrs. Charles Courtenay, of Parkstone, Dorsetshire, and GRACE MARY, youngest daughter of Mr. R. P. BARROW, late I.C.S. of Bovey Tracey, Devonshire. The marriage will take place shortly at Bangalore (India).

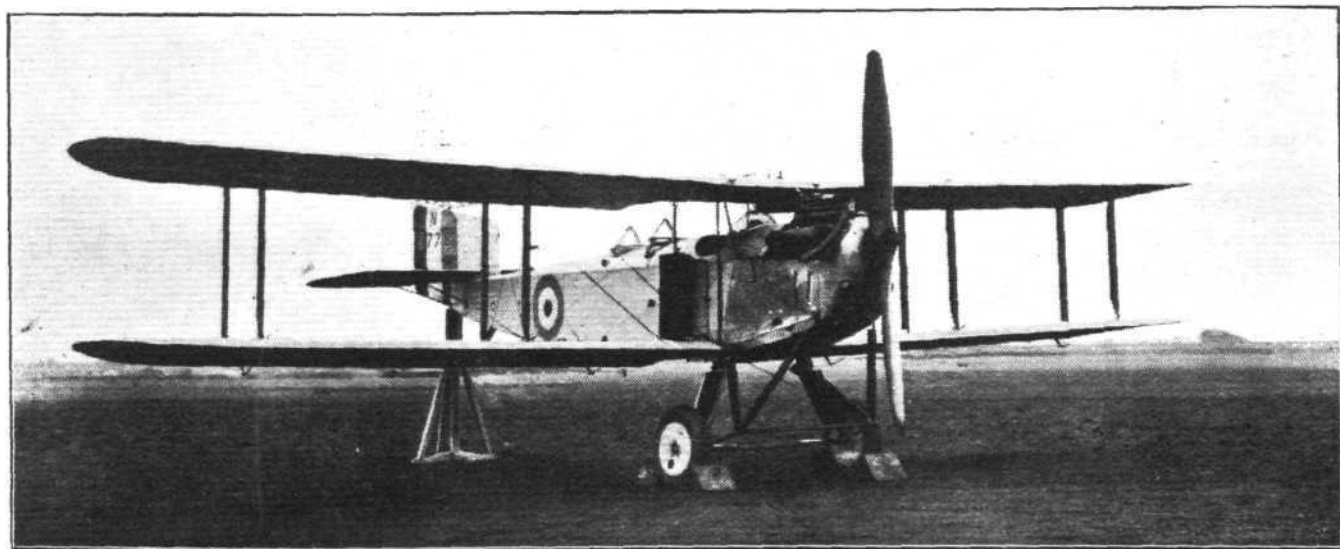
The engagement is announced between Flight Lieut. WILLIAM ALEC CORYTON, M.V.O., D.F.C., R.A.F., youngest

son of the late William Coryton, D.L., J.P., of Pentillie Castle, East Cornwall, and of Mrs. Coryton, Fursdown, Plympton, and PHILIPPA DOROTHEA, elder daughter of Mr. and Mrs. DANIEL HANBURY, of Castle Malwood, Lyndhurst, Hampshire, and Alassio, Italy.

The engagement is announced between GWILYM H. LEWIS, D.F.C. (late R.F.C.), of 1A, Lower Grosvenor Place, S.W.1, son of Mr. and Mrs. Hugh Lewis, of St. David's, Nocton, Birkenhead, and CHRISTIAN, second daughter of Mr. and Mrs. H. W. ROBERTSON, of Fintry, Brook, Surrey.

Item

The Air Attaché to the Italian Embassy notifies his change of address as from March 14, from 7, Norfolk Street, Strand, W.C., to 28, Norfolk Street, Park Lane, W.1. The telephone number is Mayfair 3741.



A New Fairey 3D : Produced originally as a seaplane, in which form it was used by Wing-Commander Goble for his round-Australia flight, the Fairey 3D is also used as a land machine, in which guise it is shown in our photograph. A special Fairey oleo undercarriage is fitted. The engine is a Napier "Lion."

SOCIETY OF MODEL AERONAUTICAL ENGINEERS

THE following is a list of forthcoming competitions:—

- The Weston Challenge Cup, Sudbury, May 16.
- Model Engineer Challenge Cup No. 1, Sudbury, May 16.
- K. & M.A.A. Challenge Cup, Wimbledon Common, June 6.
- Felix Kelly Challenge Cup, Wimbledon, June 6.
- Model Engineer Challenge Cup No. 2, Sudbury, June 20.
- D. H. Pilcher Challenge Cup, Sudbury, June 20.
- The Sir John Shelley Challenge Cup, Wimbledon, July 4.
- The Gamage Challenge Cup, Wimbledon, July 4.
- The Lady Shelley Challenge Cup, Sudbury, July 18.
- And General Records, Sudbury, July 18.
- The Flight Challenge Cup, Sudbury, September 5.
- And General Records, Sudbury, September 5.

The rules for the "Flight Challenge Cup," the "Lady Shelley Challenge Cup," and the "Model Engineer Challenge Cup No. 2" are as follows:—

Research Competitions, 1925

Rules for "Flight" Cup.

1. The model to consist of a wing only; that is to say, a full-sized machine of similar design would contain its engines, passengers, and cargo inside the wing. If rubber is used for motive power it must be enclosed in the wing. In all other respects the design of the model is left to the ingenuity and individual fancy of the competitor.

2. The model shall not weigh less than 6 ozs.

3. The best of three flights to count, and points to be awarded on the formula: Duration in secs. multiplied by the square root of loading in ounces per square foot. Additional points may be added for stability during the three flights, the maximum number of such added points to be 20.

4. The competition to be open to all. Entrance fee for non-members 2s. 6d.

Prizes:—1st winner to hold "Flight" Cup until the next competition for the same Cup, and be awarded a silver-gilt medal and £2 2s. 0d. 2nd prize: Silver medal and £1 1s. 0d. 3rd prize: Bronze medal and 10s. 6d.

Rules for the Lady Shelley Cup.

1. The model shall be of the "Dunn" type, with tractor screw, the use of a fuselage or spar to be optional, likewise a

tail or fins. The angle on the wings in plan form to be between 90 deg. and 140 deg.

2. The best of three flights to count, and points to be awarded on the formula: Duration in secs. multiplied by the square root of loading in ounces per square foot.

3. The competition to be open to all. Entrance fee for non-members 2s. 6d.

1st prize: Winner to hold Cup until the next competition for the same Cup, and to be awarded a silver medal with 10s. cash for expenses. 2nd prize: Bronze medal and 5s. cash. 3rd prize: Diploma and 2s. 6d. cash.

N.B.—Diplomas are presented at next Annual General Meeting.

Rules for Model Engineer Cup No. 2.

1. Models must be fuselage gliders designed similar to possible full-sized aeroplanes.

2. Models should have a loading of exactly 4 ozs. per square foot of supporting surface. Any slight deviation in the loading figure will only be permitted at the discretion of the judges.

3. There will be no limit to weight or size of model.

4. The models must first be glided by hand, the judges so decide whether the models are in correct flying trim, a *sine qua non*.

5. Any purely automatic self-righting device may be employed which, in the opinion of the judges, will be applicable to full-sized machines. Any such device to be in operation during the trial glide.

6. The models in the actual test will be released in a horizontal position from the Society's aerial (22 ft. high). The winning model to be the one which, in the opinion of the judges, recover flying equilibrium in the least vertical distance without stalling afterwards.

Prizes: 1st winner of the Model Engineer No. 2 Cup until the next competition for the same cup, and to be awarded a silver medal and 10s. cash. 2nd prize: Bronze medal and 5s. cash. 3rd prize: Diploma and 2s. 6d. cash.

The above competition to be open to members of the S.M.A.E. and of affiliated clubs.

A. E. JONES, Hon. Secretary

Fleet Air Arm Appointments

THE Admiralty announces the following appointments:—Lieuts. (Flying Officers, R.A.F.)—H. Ditton, H. R. Hancox, J. Y. Mills, and C. B. Tidd, to *Eagle*, and for Pilot duties in No. 402 Flight, April 4.

Aircraft-Carrier Changes

ORDERS have been issued that the aircraft-carrier "Pegasus," Commander H. C. Rawlings, D.S.O., which has just returned to England from special service at Singapore, is to be reduced to reserve at Devonport. The crew will be given foreign service leave in two watches while the ship is being prepared for reserve, reduction to that status taking place as soon as possible after the leave. It has also been approved for the "Hermes," Captain the Hon. Arthur Stopford, C.M.G., to proceed to Portsmouth next month to pay off and recommission, instead of to Chatham, as at first arranged. The new crew will travel by rail from Chatham to Portsmouth. The old crew of the "Hermes" will be transferred to Portsmouth Depot before foreign service leave is given.

Fokker a Member of Royal Dutch Institute of Engineers

AT a meeting of the Royal Dutch Institute of Engineers at Amsterdam on March 17, Mr. Fokker was presented with the honorary membership of the Institute. During the meeting Mr. Fokker delivered a lecture on the development of the aeroplane, especially commercial machines, and at the conclusion of his lecture he invited some 300 members to the aerodrome at Schiphol, where they saw various Fokker machines in flight and under construction, some members being taken up for flights.

£100,000 Air Contract

IN connection with the contract for £100,000 for the construction of ten steel sheds secured by Messrs. Wright, Anderson and Co., Ltd., of Gateshead, the Air Ministry makes the following announcement:—A contract has been awarded to the firm in question for the provision and erection of ten steel sheds for housing aeroplanes. They are required in connection with the Home Defence expansion scheme, and will be placed at certain aerodromes as required by the Air Ministry. The contract is limited to the work on the sheds, and does not include work on the landing

ground, or on the housing and messing accommodation for officers and men, or on the workshops at any of the aerodromes.

Co-ordinating Technical Committee on Airships

THE Air Ministry announces that a special sub-committee of the Aeronautical Research Committee has been appointed to act as a co-ordinating technical body on airships.

The Committee will keep in touch with developments in design and with the research and experimental work initiated both by the Airship Guarantee Company and the Royal Airship Works, and consider and report to the Air Council on any design, research and experimental questions that may be referred to them, whether arising at the Royal Airship Works or in connection with the Airship Guarantee Company's contract.

The composition of the Committee will be:—

Prof. L. Bairstow, C.B.E., F.R.S., Zaharoff Professor of Aeronautics in the University of London.

Mr. R. V. Southwell, Superintendent of the Aerodynamics Department of the National Physical Laboratory.

Mr. H. T. Tizard, A.F.C., Principal Assistant Secretary, Department of Scientific and Industrial Research.

Aerial Photography and Survey

THE Aircraft Operating Co. which has accomplished a considerable amount of good work in connection with aerial survey, has absorbed Aerofilms, Ltd., which, also, has done much in the way of aerial photography. The most important work that the subsidiary company of Aerofilms has in hand at the moment is an air survey of London, and this will be begun as soon as the weather conditions become suitable. Mr. F. L. Wills, the managing director of Aerofilms, will continue to act in that capacity on the air photographic side, and the offices and works of his old company will be moved to the first headquarters of the Aircraft Manufacturing Company at Hendon, now to be known as Aerial House, Edgware Road, The Hyde, Hendon. The registered offices of the Aircraft Operating Co. remain at Kingsway.

To the Pole by Airship?

GRETTIR ALGARSSON, of Vancouver, according to the *Daily Express*, will use an airship—now being built by Messrs. C. G. Spencer and Sons of Highbury—in his attempt to fly to the North Pole next month.

THE ROYAL AIR FORCE

London Gazette, March 31, 1925

Air Commodore A. M. Longmore, C.B., D.S.O., is apptd. Director of Equipment, Air Ministry; April 1 (vice Air Commodore D. Le G. Pitcher, C.M.G. C.B.E., D.S.O.).

General Duties Branch

Flight Lieut. L. J. Riordan, A.F.C., takes rank and precedence as if his appointment as Flight Lieut. bore date Jan. 1, his name appearing on the gradation list immediately below that of Flight Lieut. A. P. Davidson (reduction to take effect from Mar. 23).

Stores Branch

Flying Off. F. Battey-Pratt is placed on the retired list; April 1.

Reserve of Air Force Officers

The following are confirmed in rank:—*Flying Officers*.—J. A. Shaw; Mar. 1. O. M. Baldwin, D.F.C.; Mar. 7. J. C. Cantrill; Mar. 11. *Pilot Officers*.—L. D. Hamblin; Mar. 18. E. P. Clacey; Mar. 23. J. W. Bowler; Mar. 23.

The following *Flying Officers* are transferred from Class C to Class A (Mar. 31):—J. E. A. Hoare, L. S. Punnett. *Pilot Off.* G. O. Wood is transferred from Class A to Class C; Mar. 31.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Group Captain C. L. Courtney, C.B.E., D.S.O., to R.A.F. Staff Coll., Andover, for duty as Instructor, 22.4.25.

Wing Commanders: C. H. K. Edmunds, D.S.O., O.B.E., to Armament and Gunnery Sch., Eastchurch, pending taking over command, 4.5.25. T. W. Mulcahy-Morgan, M.C., to R.A.F. Depot, pending commencement of next course at Senior Officers' Sch., Sheerness, 14.4.25. J. H. A. Landon, D.S.O., O.B.E., to Station Commandant, Iraq, for Air Staff duties, 9.3.25.

Squadron Leaders: E. A. Beulah, to R.A.F. Depot on transfer to Home Estab., 24.2.25. A. C. Maund, C.B.E., D.S.O., to Air Ministry, 14.4.25. R. Collinshaw, D.S.O., O.B.E., D.S.C., D.F.C., to No. 6 Group H.Q., Kenley, 14.4.25. F. H. M. Maynard, A.F.C., to H.Q. Inland Area, 14.4.25. T. E. B. Howe, A.F.C., to R.A.F. Base, Gosport, 14.4.25. E. M. Pollard, to R.A.F. Depot, 14.4.25. G. C. Pirie, M.C., D.F.C., to Air Ministry, 27.4.25. T. W. Elsdon, to R.A.F. Depot, on transfer to Home Estab., 14.4.25.

Flight Lieutenants: H. V. Rowley, to No. 47 Sqdn., Egypt, 17.1.25. J. P. Coleman, A.F.C., to R.A.F. Depot, 14.4.25. J. W. B. Grigson, D.S.O., D.F.C., P. F. Fullard, D.S.O., M.C., A.F.C., and C. J. S. Dearlove, to R.A.F.

Depot, 14.4.25. J. H. Green, to No. 24 Sqdn., Kenley, 14.4.25. L. N. Hollinghurst, D.F.C., to H.Q. Inland Area, 14.4.25. C. J. Truran, A.F.C., to No. 84 Sqdn., Iraq, 13.3.25. J. I. T. Jones, D.S.O., M.C., D.F.C., M.M., to Aircraft Depot, Iraq, 14.3.25. A. N. Bengie, to R.A.F. Depot, 31.3.25. S. C. Harker, to C. and M. Party, Isle of Grain, 28.3.25.

Flying Officers: J. M. Wyer, M.B.E., D.S.M., to No. 47 Sqdn., Egypt, 30.1.25. G. S. White, to No. 9 Sqdn., Manston, 6.4.25. H. W. Parker, to R.A.F. Depot, on transfer to Home Estab., 14.2.25. D. S. Brookes, to No. 4 Sqdn., S. Farborough, 10.4.25. C. H. Cahill, to No. 70 Sqdn., Iraq, 20.12.24. R. E. M. Milne, to Aircraft Depot, India, 27.3.25. J. W. Mitchell, to R.A.F. Depot, on transfer to Home Estab., 15.4.25. D. W. F. Bonham Carter, to No. 14 Sqdn., Palestine, 18.3.25.

Pilot Officer V. A. C. Ross, to No. 58 Sqdn., Worthy Down, 1.4.25.

Stores Branch

Flying Officer H. J. Bamber, to R.A.F. Depot (Non-effective Pool), on transfer to Home Estab., 24.2.25.

Accountant Branch

Flight Lieutenant I. L. Wincer, to Engine Repair Depot, Egypt, 29.1.25.



NAPIER STAFF DINNER

THE firm of D. Napier and Son, Ltd., the famous aero engine and motor-car constructors, held their staff dinner at the Criterion Restaurant on Saturday, March 28, with Mr. H. T. Vane, C.B.E., the managing director, in the chair, supported by Sir Harry Brittain, M.P., Mr. George Pate, and Mr. Henry Cooke. A telegram was read from Mr. Montague S. Napier, the chairman of the company, regretting his inability to be present, owing to his absence abroad, but thanking the staff for their hard work and wishing them an enjoyable evening.

Mr. Hutchinson, the Progress Manager, in proposing the Napier Company, briefly outlined the history of the firm, going back as it does to the year 1808, drawing his hearers' attention to the fact that in all they undertook they had excelled until now with their famous aero engines they were still excelling in their business.

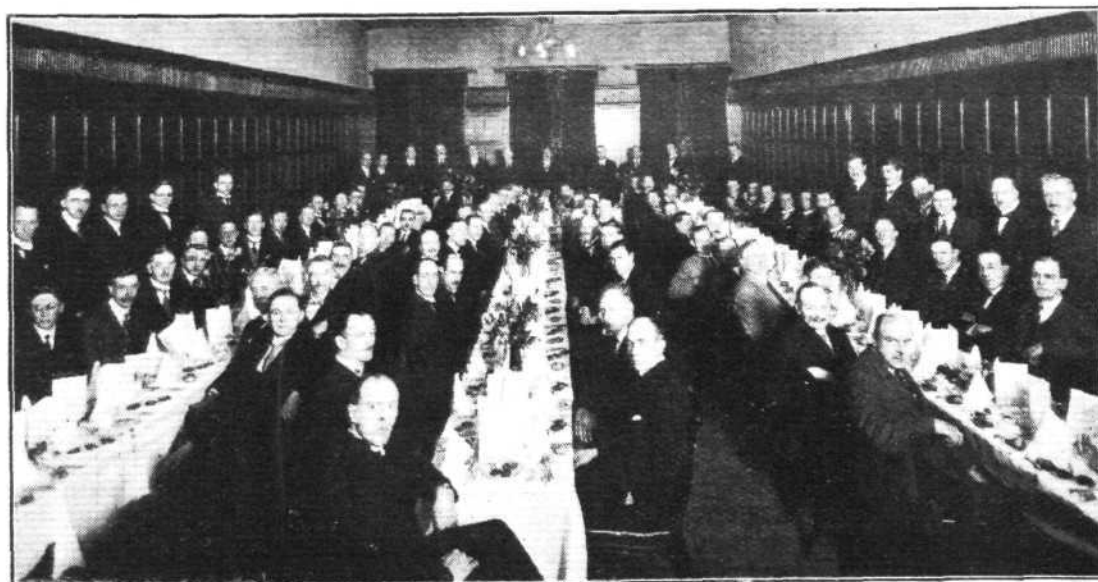
Sir Harry Brittain replied on behalf of the board, thanking the staff for the admirable way in which they had worked and the loyalty and skill they had displayed.

Mr. Pate, the chief engineer of the company, and also a

director, delved into the future, and whilst with true Scottish caution he did not attempt to visualise what the aero engine of the future would be, he was confident of the fact that the Napier Co., as now, would always be ahead developing and progressing, provided they kept to their present lines of honesty of purpose, perseverance and hard work.

Mr. Allen, the works manager, proposed the health of Mr. Vane, referring briefly to how much the success of the firm rested on his able conduct of its affairs, the toast being received enthusiastically with musical honours.

Mr. Vane replied, saying how much he appreciated what had been said, stating that by a happy coincidence the dinner was taking place on the day that the result of the last year's work was published, which showed that the firm has just completed the best year that he had known. He thanked the staff for their loyal co-operation and hard work, which had enabled them to successfully surmount the difficulties experienced a few years ago, and finished up with an optimistic note as to the future of the Napier Co. and the aircraft industry.



Photograph taken
on the occasion of
the Staff Dinner
held by D. Napier
and Son, Ltd., on
March 28.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

FLYING MODELS AND RESEARCH

[2093] Apropos of your leading article in the issue of FLIGHT of March 12 on the subject of safety in flying, it is opportune to remind you of the work being carried on by the Research Committee of this Society. On January 8 last you kindly published a report of a competition for model gliders which when dropped vertically would right themselves quickly and automatically and then glide to earth. This was very successfully accomplished by a modified Dunne-type machine. This model, when deliberately stalled, dips its nose and glides, not falls, to earth. The members who witnessed the performance were greatly impressed by it, and the committee has organised for the coming season a competition for this particular design of model in actual flight. A certain amount of aerodynamical efficiency is sacrificed for safety, which at the moment is more important.

On this score we do not anticipate this design being acceptable to experts, but will not perturb those who are making and testing these model aeroplanes.

When the necessary flying trials of this model have been successfully carried out, we hope to arrange a demonstration to show its capabilities and to obtain advice as to whether it will be practicable in full-sized practice.

Members of the above committee are open to carry out similar experiments on aeroplanes in free flight by means of flying models, and would welcome suggestions from aeroplane designers or manufacturers as to what might be tested in the interests of safer flying.

The rules for three proposed research competitions for model aeroplanes during the coming summer are enclosed (see p. 218), and it is hoped these will interest you, especially the one for the FLIGHT Cup.

W. E. EVANS,

Hon. Sec. Research Committee

L.S.D. AND FLYING

[2094] With reference to your correspondent's remarks under above heading.

There seems to be some misunderstanding with regard to the so-called "finding" of the right young men for sporting flying.

The first essential is to find men with the sporting spirit for it, who would be prepared to give their support first, if only in a small way, and afterwards think about the possibility or otherwise of owning a machine of their own.

The Light Plane Clubs will afford a splendid opportunity in this respect, even for those with only a very modest bank balance, and it remains to be seen what measure of support they are going to get from the enthusiastic ones.

J. H. FRANKS

SUPERCHARGING

[2095] I have been very much interested in the letter from Mr. W. E. Gray with regard to supercharging, in your issue of March 19.

I am the more interested, as I am the owner of the master patents in Great Britain, No. 21614/14, and its Patent of Addition No. 106539, for supercharging, not only for aeroplanes, but also for motor vehicles.

I have been carefully watching, so far as was possible, to obtain information of what was being done in the works at Farnborough with regard to the question of supercharging the engines of aeroplanes during the War, and I believe that I know generally what was done.

I think that it has now been shown that the Rateau method is too complicated and adds too much weight to an aeroplane for this system to survive.

Eventually there can be no doubt all touring cars and probably all racing cars will be fitted with superchargers, and equally there is no doubt that superchargers will be fitted to aeroplane engines, particularly to enable them to overcome the difficulty of the decrease of atmospheric pressure with altitude.

For supercharging aeroplanes, the centrifugal fan or blower must be driven by the engine and at a higher rate of speed than the engine in order to ensure continuance of the starting level power at higher altitudes, and especially will this apply presently to aeroplanes for commercial flying. There should also be a controlled variation of speed of the supercharger to enable the pilot to control the speed of the engine and aeroplane as required when starting, manoeuvring and landing.

J. D. ROOTS

IN PARLIAMENT

Civil Aerodromes

LIEUT.-COLONEL HENEAGE, on March 25, asked the Secretary of State for Air if he will consider the establishing of further municipal or civil landing places for aircraft to encourage civil aviation?

The Under-Secretary of State for Air (Major Sir Philip Sassoon): It is not desirable, for financial and other reasons, to provide Government civil aerodromes in advance of the need for them, but the attention of local authorities has been drawn to the desirability of making provision for aerodromes, particularly in connection with town planning schemes.

Royal Air Force and Attaches

LIEUT.-COLONEL HENEAGE asked the Secretary of State for Air if he will arrange for British Air Attaches to visit our aircraft manufacturers before they take up their posts?

Sir P. Sassoon: Arrangements are always made to ensure that officers appointed as air attaches are conversant with the various types of both Service and civil aircraft. Visits to aircraft factories are arranged when considered necessary.

Foreign Pilots and Training with the R.A.F.

LIEUT.-COLONEL HENEAGE asked the Secretary of State for Air what facilities are offered to foreign pilots to train with our Air Force with a view of encouraging the purchase of British aircraft manufactures?

Sir P. Sassoon: The resources of the Air Force are available for the training of foreign officers as far as Service requirements permit, and it is the policy of the Air Ministry to encourage the attachment of such officers in suitable cases.

Lieut.-Colonel Heneage: Is the hon. and gallant gentleman aware that in countries where they encourage foreign pilots to come a great deal of trade results?

Sir P. Sassoon: Yes, and that is one of the reasons why we encourage foreign pilots to come whenever they can.

PUBLICATIONS RECEIVED

Technical Notes of the National Advisory Committee for Aeronautics: No. 209.—Tests of Rotating Cylinders. By E. G. Reid. December, 1924. *No. 210.*—The Testing of Aviation Engines under Approximate Altitude Conditions. By R. N. DuBois. December, 1924. *No. 211.*—Aircraft Engine Design. By E. E. Wilson. January, 1925. *No. 212.*—Simplified Propeller Design for Low-Powered Airplanes. By F. R. Weick. January, 1925. U.S. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Résumé of Commercial and Technical Information. February, 1925. Series 3. No. 31. Air Ministry, Adastral House, Kingsway, W.C.2.

NEW COMPANY REGISTERED

PALMER AUTOMOBILES, LTD., 622, London Road, Westcliff-on-Sea, Essex.—Capital £1,000, in £1 shares. Makers and repairers of and dealers in aeroplanes, biplanes, water planes and planes of similar construction, etc. Permanent directors: E. T. Palmer (managing director) and W. J. Perrett.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1923

Published April 9, 1925

30,858. H. LEITNER. Screw propellers. (230,532.)

APPLIED FOR IN 1924

Published April 2, 1925

574. H. J. POLLARD and BRISTOL AEROPLANE CO., LTD. Light-metal spars or beams. (230,213.)

2,689. H. JUNKERS. Flying machines. (210,796.)

Published April 9, 1925

5,376. DORNIER METALLBAUTEN GES. and C. DORNIER. Driving of flying machines. (212,547.)

28,099. J. GALLAND. Trucks for use in manoeuvring aircraft. (230,757.)

APPLIED FOR IN 1925

Published March 26, 1925

3,998. VICKERS, LTD., and F. W. SCARFF. Gun mountings for use on aircraft. (229,992.)

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